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Burnout and sleep quality among community health workers during the pandemic in selected city of Andhra Pradesh

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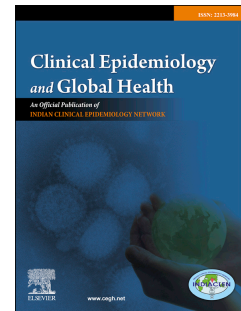
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1   **Burnout and Sleep Quality among Community Health Workers during the**

2   **Pandemic in Selected City of Andhra Pradesh**

3   Abstract:

4   **Background:** This pandemic has resulted in physical and emotional exhaustion

5   among everyone, especially among community healthcare workers (CHWs), resulting

6   in increased burnout and poor sleep quality. This pandemic has increased

7   responsibilities for Accredited Social Health Activist (ASHA) workers and Auxiliary

8   Nurse Midwife (ANM) at the grassroots. Previous studies have shown that infectious

9   diseases like SARS and MERS directly affect sleep. With the COVID-19 pandemic,

10   burnout and poor sleep among healthcare workers are expected to increase. **Aim:** To

11   determine the prevalence of burnout and sleep quality among community health

12   workers. **Settings and Design:** This Cross-sectional study was conducted from

13   February to April 2020 in Urban Primary Health care centres of Guntur city, Andhra

14   Pradesh. **Methods and Material:** Copenhagen Burnout Inventory scale (CBI) with a

15   5-point Likert scale and Pittsburgh Sleep Quality Index (PSQI) Questionnaire were

16   used among four hundred and ten study participants. Descriptive statistics and the Chi-

17   square test were used; a p-value of ≤0.05 is considered significant. **Results:** The

18   prevalence of personal burnout was 16.8%, while work-related and pandemic-related

19   burnouts were 10.5% and 25.4%, respectively. The prevalence of poor sleep quality

20   was 35.09%. Fear of contracting the virus was present among 38.3%. Fear of infecting

21   the family members because of their exposure was reported by 36.6% of the

22   respondents; 71.7% and 79.3% reported receiving support from the organisation and

23   colleagues, respectively. **Conclusions:** The provision of necessary equipment,

24   regular check-ups and timely interventions will minimise the risk of stress and burnout.

25 **Keywords:** Auxiliary nurse-midwife, accredited social health activist, personal

26 burnout, work-related burnout, pandemic-related burnout.

27 Key Messages: Community health workers act as a bridge between the community

28 and the health system. There is a need to provide proper measures and improve their

29 overall well-being.

30

31 **Introduction:**

32 Community Health Workers (CHW) are the community members chosen to work

33 closely with the people supported by the health system but are not necessarily a part

34 of the organisation. The main advantage of having a CHW is that the people easily

35 accept them. In India, the concept of CHW has a long and rich history; there are four

36 cadres for CHW: ASHA (Accredited Social Health Activist), ANM (Auxiliary nurse

37 midwife), Anganwadi worker and multi-purpose health assistant [1].CHW are assigned

38 various responsibilities under national health programs. With the declaration of the

39 COVID-19 pandemic, additional duties are assigned to ASHA workers and ANM, such

40 as contact tracing, community surveillance, implementing home quarantine, and

41 identification of high-risk groups (HRG) and probable cases [2].

42 Burnout is the emotional and physical exhaustion when one reaches their limits.

43 Burnout in health care professionals can be more prevalent during the pandemic

44 because of the increased workload [3]. Good sleep, in terms of quality and quantity, is

45 essential for optimal day-to-day functioning. Sleep problems can lead to changes in

46 mental health, but mental health conditions can also worsen problems with sleep [4].

47 It is essential to know the mental health status of the CHW and provide them with the

48 necessary measures. There are several studies conducted on healthcare

49 professionals (Physicians, Nurses etc.) working in a hospital, but very few on

50 community health workers (ANM/ASHA) who were the focal point of contact to the

51 community members during the COVID-19 pandemic. Hence, this study aims to

52 determine the prevalence of burnout and sleep quality among community health

53 workers during the pandemic. The study also determines the factors associated with

54 burnout and sleep quality.

Materials and Methods:

This Cross-sectional study was conducted in 13 urban primary health care centres (UPHC) in Guntur city from February to April 2020. A sample size of 410 was estimated, taking the prevalence as 50% and considering a 5% non-responsive rate. ASHA workers and ANMs present on the day of data collection and those who gave consent were included in the study. The complete enumeration of CHW from all the UPHCs was done. A self-administered pre-structured questionnaire was used as a tool; it was translated to the Telugu language for easy understanding. The tool consisted of three parts: First part contains socio-demographic details (age, marital status, type of family, type of residence etc.) and work-related information (experience, hours of work, population covered, field visits and designation) of the participants.

The second part was the Copenhagen Burnout Inventory (CBI) which consisted of 3 domains: personal burnout, work-related burnout, and pandemic-related burnout. The personal and work-related burnout were taken from CBI, pandemic related burnout was adapted from a study in India [5]. The responses are 5-point Likert scale (1: always; 2: often; 3: sometimes; 4: seldom; 5: never). The total scores were categorised as No Burnout (less than 50), Moderate Burnout (50-74) and High Burnout (75-99). To calculate the prevalence of burnout was calculated by adding moderate and high burnout, low level was considered to be normal burnout and hence ignored. The third part of the tool was Pittsburgh Sleep Quality Index (PSQI) [6]. The scores of PSQI ranged from 0 to 21. As there are no standard cut-off values to determine the level of sleep quality, quartiles were used to classify the same. Scores below 25th, 25th to 75th and above 75th percentile were considered to categorise sleep quality into good, moderate, and poor, respectively. A score below 6 as good sleep quality, 6-8 as moderate sleep quality, and above 9 as poor sleep quality.

80   A pilot study was conducted before the original research in a similar survey setting to

81   check the feasibility of the study and reliability of the study tools. The Institutional Ethics

82   Committee approved the study, and formal approval was taken from the District Health

83   Officer of the study area. The data were coded, entered, and analysed using SPSS

84   (Statistical Package for Social Science) version 15. Socio-demographic variables were

85   described as frequency and percentage. To find the association Chi-square test was

86   used, level of p ≤ 0.05 was taken as statistically significant.

87   **Results:**

88   A total of 410 CHWs participated in the study, out of which 221 were ASHAs, and 189

89   were ANMs. Table 1 represents the distribution of respondents based on socio-

90   demographic and work-related characteristics. The mean age of study participants is

91   34 ± 5 years, and all the participants were females. The majority, 305 (74.4%) of the

92   study participants) live in a nuclear family; 360 (87.8%) were married. Among married,

93   261 (69.4%) had more than one child. The level of education for ANMs is ANM/GNM

94   nursing for 94.7% of the respondents, whereas ten respondents have done BSC

95   Nursing. For work experience, the mean is 6 ± 4 years. The minimum number of

96   working hours is reported as 8 hours and the maximum as 12 hours; the number of

97   weekly field visits ranges between 5 to 7 days.

98   Table 2 represents the distribution of participants based on burnout and sleep quality.

99   83.2% of the respondents were classified under a low level of personal burnout, while

100   2.7% reported having high burnout. The pandemic had little effect on community health

101   workers showing 24.9% had moderate pandemic-related burnout. 35.9% of the

102   community health worker had poor sleep quality. The prevalence of personal burnout

103   is 16.8%, work-related burnout is 10.5%, and pandemic-related burnout is 25.4%.

104   Among ASHA workers, 21.3% had personal burnout, 12.7% had work-related burnout,

105   and 29% had pandemic-related burnout. Among ANMs, 11.6% had personal burnout,

106   6.9% had work-related burnout, and 21.2% had pandemic-related burnout.

107   Table 3 represents the distribution of respondents according to pandemic-related

108   burnout. The respondents feared getting infected with the COVID-19 virus for

109   themselves and family while working during the pandemic (mean score=50.7 ±38.0

110   and 47.9 ±38.2, respectively). The respondents reported that their colleagues

111   supported them during the pandemic and did not fear death due to COVID-19 (mean

112   score= 11.0 ±25.6 and 11.8 ±26.7, respectively).

113   Table 4 illustrates the distribution of respondents according to personal and work-

114   related burnout. The mean score of personal burnout is 35 ± 18; for work-related

115   burnout, the mean score is 34 ± 15; and for pandemic-related burnout, the mean score

116   is 42 ± 15.

117   Table 5 represents the association of burnout with socio-demographic and work-

118   related variables. None of the work-related variables was significantly associated with

119   personal burnout. Age (p=0.309) and type of family (p=0.582) did not affect

120   substantially personal burnout. Factors such as the number of field visits and hours of

121   work did not show any significant association with work-related or pandemic-related

122   burnout. The total population covered (p<0.05) and the number of children (p=0.029)

123   was significantly associated with pandemic burnout. None of the socio-demographic

124   variables was significantly associated with work-related and pandemic-related burnout.

125   The age of the respondents was found to be significantly associated with sleep quality

126   (p<0.001), marital status (p =0.018), type of housing (p =0.008) and years of work

127   experience (p =0.039). In contrast, factors such as hours of work, field visits, and the

128   population covered did not show any association with sleep quality. The problem of

129   keeping up the enthusiasm to get things done was present among 46.8% of the

130   respondents, and trouble staying awake while engaging in any activity was present

131   among 24.6% of the respondents. Burnout did not show a significant association with

132   sleep quality. **(Table 6)**

133   **Discussion:**

134   The prevalence of personal burnout was 16.8%, work-related burnout was 10.5%, and

135   pandemic burnout was 25.4%. Sleep quality was moderate among 37.8% of the

136   participants and poor among 36.05%. Personal burnout in the current study was

137   associated significantly with the designation of the respondents. In contrast, studies

138   conducted in Ethiopia and China found that nurses had the highest prevalence of

139   burnout [7, 8].

140   The number of working hours in a day was significantly associated with personal

141   burnout among healthcare professionals in a tertiary healthcare setting in Kerala. In

142   contrast, no association was found in the current study [9]. The present study found

143   that years of work experience were significantly associated with work-related burnout;

144   the studies conducted in Delhi and Andhra Pradesh among nurses and clinicians found

145   that respondents with low years of expertise reported high levels of burnout [10, 11].

146   According to studies in India and Andhra Pradesh, the pandemic burnout was more

147   among the age group of 31 – 40. In contrast, age did not correlate with pandemic

148   burnout in the current study [5,12]. There is no association between the number of

149   working hours and years of experience with pandemic burnout in the present study,

150   which is similar to the findings of a multinational study. In contrast, a study conducted

151   in North India in a tertiary healthcare setting found that the average number of working

152   hours was associated with burnout during the pandemic [13,14].

153   In the current study, age was significantly associated with sleep quality. The finding is

154   similar to a study in Iran which found that respondents above 45 years had poor sleep

155   quality [15]. Studies conducted in China and India also found that poor sleep quality

156   increased with age, whereas a study conducted in Tripura did not find any association

157   [16-19]. The type of housing was significantly associated with sleep quality in the

158   present study, similar to a survey in Tripura [16]. The designation of the respondents

159   was not associated with sleep quality in the current study. In contrast, a study in China

160   among healthcare professionals during the pandemic revealed that being a nurse was

161   related to poor sleep quality [18].

162   The total population covered by ASHA workers is not per norms, which may lead to an

163   increased workload and, in return, occupational stress [19]. Most respondents feared

164   contracting the virus and infecting their family members because of their exposure.

165   The majority of respondents reported a feeling of non-acceptability by the community

166   and a lack of time to spend with family and friends. Early identification of the factors

167   causing burnout is necessary to improve the overall well-being.

168   **Strength and Limitations**

169   The strength of the current study was that the questionnaires used (CBI and PSQI) are

170   tested and validated in various national and international studies. Also, a pilot study

171   was conducted to check for the reliability of the questionnaire. However, the study's

172   weakness was relying on the participants' self-reporting. Being a cross-sectional study

173   may limit our ability to identify causal relationships between burnout and sleep quality.

174   **Conclusions:**

175   The present study showed that designation, level of education, and years of

176   experience were associated with work-related burnout. The number of children and

177   designation of the respondents were determining factors for personal burnout. For

178 sleep quality, age, marital status, and type of housing were found to be determining

179 factors. The total population covered by ASHA workers is not per norms which may

180 lead to increased workload. The provision of necessary equipment, regular check-ups

181 and timely interventions will benefit in minimising the risk of stress and burnout.

182 Subsequently, more in-depth assessments are needed for a better understanding of

183 the mental health of CHWs.

184 **Source(s) of support**: Nil

185 **Conflicting Interest (If present, give more details):** Nil

186

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11

Table 1: Distribution of respondents based on socio-demographic and work related characteristics

Characteristics	ASHA n (%)	ANM n (%)	Total n (%)
Designation	221 (54)	189 (46)	410 (100)
Age (in years)			
< 30	81 (36.7)	39 (20.6)	120 (29.3)
30 – 35	63 (28.5)	61 (32.3)	124 (30.2)
36 – 40	60 (27.1)	63 (33.3)	123 (30.0)
> 40	17 (7.7)	26 (13.8)	43 (10.5)
Type of family			
Nuclear family	155 (70.1)	150 (79.4)	305 (74.4)
Extended family	66 (29.9)	39 (20.6)	105 (25.6)
Marital status			
Unmarried	21 (9.5)	13 (6.9)	34 (8.3)
Married	196 (88.7)	164 (86.8)	360 (87.8)
Widowed/ Divorced	4 (1.8)	12 (6.3)	16 (3.9)
Number of children (n=376)			
No children	11 (5.5)	6 (3.4)	17 (4.5)
One	57 (28.5)	41 (23.3)	98 (26.1)
More than one child	132 (66)	129 (73.3)	261 (69.4)
Type of residence			
Rented house	92 (41.6)	77 (40.7)	169 (41.2)
Own house	129 (58.4)	112 (59.3)	241 (58.8)
Years of work experience			
< 5	88 (39.8)	127 (67.2)	215 (52.4)
5 – 10	84 (38)	33 (17.5)	117 (28.5)
> 10	49 (22.2)	29 (15.3)	78 (19.1)
Number of working hours (in a day)			
8	128 (57.9)	84 (44.4)	212 (51.7)
> 8	93 (42.1)	105 (55.6)	198 (48.3)
Number of field visits (in a week)			
5	35 (15.8)	26 (13.8)	61 (14.9)
> 5	186 (84.2)	163 (86.2)	349 (85.1)

12

Total population covered			
< 4000	76 (34.4)	66 (34.9)	142 (34.6)
4000 – 4500	87 (39.4)	74 (39.2)	161 (39.3)
> 4500	58 (26.2)	49 (25.9)	107 (26.1)

Table 2: Distribution of respondents based on burnout, and sleep quality

Characteristics	ASHA n (%)	ANM n (%)	Total n (%)
Personal burnout			
Low	174 (78.7)	167 (88.4)	341 (83.2)
Moderate	40 (18.1)	18 (9.5)	58 (14.1)
High	7 (3.2)	4 (2.1)	11 (2.7)
Work related burnout			
Low	193 (87.3)	174 (92.1)	367 (89.5)
Moderate	22 (10)	15 (6.9)	37 (9)
High	6 (2.7)	0	6 (1.5)
Pandemic related burnout			
Low	157 (71)	149 (78.8)	306 (74.6)
Moderate	63 (28.5)	39 (20.6)	102 (24.9)
High	1 (0.5)	1 (0.6)	2 (0.5)
Sleep Quality			
Good	62 (28)	46 (24.3)	108 (26.3)
Moderate	85 (38.5)	70 (37.1)	155 (37.8)
Poor	74 (33.5)	73 (38.6)	147 (35.9)

13

Table 3: Distribution of Respondents according to Pandemic related burnout

Questions	Always n (%)	Often n (%)	Sometimes n (%)	Seldom n (%)	Never n (%)	Mean score
Feeling hard to work in the current scenario	14(3.4)	24 (5.9)	102 (24.8)	148 (36.1)	122 (29.8)	29.2 ±25.7
Drain more of my energy to work during the current scenario	20 (4.9)	39 (9.5)	86 (21)	115 (28)	150 (36.6)	29.5 ±29.2
Finding fruitful while performing my work during the current scenario	191 (46.6)	46 (11.2)	51 (12.4)	45 (11)	77 (18.8)	36.0 ±39.7
Feeling of giving more than what you get back while working in the current scenario	37 (9)	26 (6.3)	78 (19.1)	76 (18.5)	193 (47.1)	27.9 ±32.7
Hesitation to work during this current scenario	19 (4.6)	20 (4.9)	68 (16.6)	68 (16.6)	235 (57.3)	20.7 ±28.7
Depressed due of the current scenario	21 (5.1)	19 (4.6)	64 (15.6)	66 (16.2)	240 (58.5)	20.4 ±29.1
Feeling that my patience is tested while working in the current scenario	31 (7.6)	24 (5.9)	58 (14.1)	72 (17.6)	225 (54.8)	23.4 ±31.6

Fear of catch of COVID-19 infection while working in the current scenario	114 (27.8)	43 (10.5)	91 (22.2)	66 (16.1)	96 (23.4)	50.7 ±38.0
Fear of family members catching COVID-19 infection because of my work exposure	103 (25.1)	47 (11.5)	81 (19.8)	71 (17.3)	108 (26.3)	47.9 ±38.2
Feel welcomed by the community because I'm HCW and working in the current scenario	202 (49.3)	51 (12.4)	57 (13.9)	28 (6.8)	72 (17.6)	32.4 ±38.6
Fear of death while working in the current scenario	25 (6.1)	5 (1.2)	18 (4.4)	44 (10.7)	318 (77.6)	11.8 ±26.7
Feel you are being properly protected by the organization while working in the current scenario	294 (71.7)	59 (14.4)	21 (5.1)	10 (2.4)	26 (6.4)	14.3 ±28.0
Feel you are being supported by colleagues during the current scenario	325 (79.3)	37 (9)	20 (4.9)	8 (2)	20 (4.8)	11.0 ±25.6
Total mean score						**42 ±13.08**

Table 4: Distribution of Respondents according to Personal burnout and work related burnout

Questions	Always n (%)	Often n(%)	Sometimes n (%)	Seldom n (%)	Never n(%)	Mean score
Personal Burnout						
Feel tired	11 (2.7)	76 (18.5)	164 (40)	123 (30)	36 (8.8)	44.0 ±23.5
I'm physically exhausted	10 (2.4)	65 (15.9)	151 (36.8)	132 (32.2)	52 (12.7)	40.7 ±24.3
I'm emotionally exhausted	14 (3.4)	47 (11.5)	118 (28.8)	157 (38.3)	74 (18)	35.9 ±25.5
I think "I can't take it anymore?"	5 (1.2)	40 (9.8)	109 (26.6)	130 (31.7)	126 (30.7)	29.7 ±25.4
Feeling worn out (extremely tired)	6 (1.5)	35 (8.5)	115 (28)	131 (32)	123 (30)	29.8 ±25.2
Feeling weak and susceptible to illness	17 (4.1)	30 (7.3)	107 (26.1)	112 (27.3)	144 (35.1)	29.5 ±27.9
					Total mean score	**35 ±18.15**
Work-related burnout						
Feeling that my work is emotionally exhausting	6 (1.5)	15 (3.6)	138 (33.7)	191 (46.6)	60 (14.6)	32.6 ±20.4
Do you feeling completely physical and mental burn-out due of my work	13 (3.2)	9 (4.6)	134 (32.7)	161 (39.3)	83 (20.2)	32.8 ±23.7
My work frustrate me	14 (3.4)	22 (5.4)	117 (28.5)	133 (32.4)	124 (30.3)	29.8 ±25.9
Feel worn out at the end of the working day	46 (11.2)	47 (11.5)	101 (24.6)	90 (22)	126 (30.7)	37.6 ±33.2

I'm exhausted in the morning at the thought of another day at work	10 (2.4)	8 (2)	57 (13.9)	109 (26.6)	226 (55.1)	17.5 ±23.7
Feeling that every working hour is tiring for me	12 (2.9)	12 (2.9)	65 (15.9)	97 (23.7)	224 (54.6)	18.9 ±25.3
Have enough energy for family and friends during leisure time	197 (48)	72 (17.6)	63 (15.4)	33 (8)	45 (11)	29.0 ±34.6
Total mean score=						**34.3 ±15.1**

Table 5: Association of burnout with socio-demographic and work-related variables

	Level of personal burnout				
Variables	**Total**	**Low (%)**	**Moderate (%)**	**High (%)**	**p-value**
Designation					
ASHA	221	174 (78.7)	40 (18.1)	7 (3.2)	0.033*
ANM	189	167 (88.4)	18 (9.5)	4 (2.1)	
Marital status					
Unmarried	34	30 (88.2)	4 (11.8)	0	
Married	360	297 (82.5)	52 (14.4)	11 (3.1)	0.522
Widowed/ Divorced	16	14 (87.5)	2 (12.5)	0	
Number of children (n=376)					
No children	17	17 (100)	0	0	
One child	98	86 (87.8)	11 (11.2)	1 (1)	0.028*
More than one	261	208 (79.7)	43 (16.5)	10 (3.8)	
	Level of work-related burnout				

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Variables	Total	Low (%)	Moderate (%)	High (%)	p-value
Designation					
ASHA	221	193(87.3)	22(10)	6 (2.7)	0.017*
ANM	189	174(92.1)	15(7.9)	0	
Years of work experience					
< 5	215	196 (91.2)	19 (8.8)	0	0.011*
5 – 10	117	107 (91.5)	8 (6.8)	2 (1.7)	
> 10	78	64 (82.1)	10 (12.8)	4 (5.1)	
Number of working hours (in a day)					
8	212	190 (89.6)	17 (8)	5 (2.4)	0.208
> 8	198	177 (89.4)	20 (10.1)	1 (0.5)	
Number of field visits (in a week)					
5	61	59 (96.8)	1 (1.6)	1 (1.6)	0.092
> 5	349	308 (88.3)	36 (10.3)	5 (1.4)	
Level of pandemic-related burnout					
Population covered					
< 3500	62	39 (62.9)	23 (37.1)	0	0.050*
> 3500	348	267 (76.7)	79 (22.7)	2 (0.6)	
Number of working hours					
8	212	152 (71.7)	59 (27.8)	1 (0.5)	0.358
> 8	198	154 (77.8)	43 (21.7)	1 (0.5)	

*p-value ≤0.05

Table 6: Association of sleep quality with socio-demographic and work-related variables

Variables	Total	Level of sleep quality			p-value
		Good n (%)	Moderate n (%)	Poor n (%)	
Designation					
ASHA	221	62 (28.1)	85 (38.5)	74 (33.4)	0.512
ANM	189	46 (24.4)	70 (37)	73 (38.6)	
Age (in years)					
< 30	120	46 (38.3)	42 (35)	32 (26.7)	0.001**
> 30	290	62 (21.3)	113 (39)	115 (39.7)	
Type of family					
Nuclear	305	77 (25.2)	123 (40.3)	105 (34.5)	0.199
Extended	105	31 (29.5)	32 (30.5)	42 (40)	
Marital status					
Unmarried	34	17 (50)	8 (23.5)	9 (26.5)	0.018*
Married	360	87 (24.2)	139 (38.6)	134 (37.2)	
Widowed/ Divorced	16	4 (25)	8 (50)	4 (25)	
Type of housing					
Own house	241	50 (20.7)	96 (39.8)	95 (39.5)	0.008*
Rented house	169	58 (34.3)	59 (34.9)	52 (30.8)	
Years of work experience					
< 5	215	68 (31.6)	79 (36.7)	68 (31.7)	0.039*
5 – 10	117	25 (21.4)	50 (42.7)	42 (35.9)	
> 10	78	15 (19.2)	26 (33.3)	37 (47.5)	
Number of working hours in a day					
8	212	54 (25.5)	88 (41.5)	70 (33)	0.259
> 8	198	54 (27.3)	67 (33.8)	77 (38.9)	

*p-value ≤0.05